**IN THE CLAIMS**

Please substitute the following listing of claims for the previous listing of claims:

1. (currently amended) A method of cleaning a chamber of an electron beam treatment apparatus, the method comprising:

generating an electron beam that energizes a cleaning gas in the chamber of the electron beam treatment apparatus;

monitoring an electron beam current;

adjusting a pressure of the cleaning gas to maintain the electron beam current at a substantially constant value; and

stopping the flow of cleaning gas when the cleaning gas pressure becomes substantially constant for a predetermined length of time.

2-3. (cancelled).

4. (original) The method of claim 1 wherein the cleaning gas comprises an oxygen-based gas.

5. (original) The method of claim 4 wherein the oxygen-based gas comprises one or more of $O_2$, ozone, NO, and $H_2O$.

6. (original) The method of claim 1 wherein the cleaning gas comprises a fluorine-based gas.

7. (original) The method of claim 6 wherein the fluorine-based gas comprises one or more of $NF_3$, $F_2$, $CF_4$, $C_2F_6$, $C_3F_8$, $SF_6$.

8. (Currently amended) A method of cleaning an electron beam treatment chamber, the method comprising:

generating an electron beam that energizes a cleaning gas in a the electron beam treatment chamber; and

stopping the flow of cleaning gas after the cleaning gas pressure becomes substantially constant for a predetermined length of time.

9. (original) The method of claim 8 wherein the cleaning gas comprises an oxygen-based gas.

10. (original) The method of claim 9 wherein the oxygen-based gas comprises one or more of $O_2$, ozone, NO, and $H_2O$.

11. (original) The method of claim 8 wherein the cleaning gas comprises a fluorine-based gas.

12. (original) The method of claim 11 wherein the fluorine-based gas comprises one or more of $NF_3$, $F_2$, $CF_4$, $C_2F_6$, $C_3F_8$, $SF_6$.

13. (original) The method of claim 8 wherein a gas pressure of about 1 Torr or greater is maintained in the chamber.

14. (original) The method of claim 9 wherein a gas pressure of about 1 Torr or greater is maintained in the chamber.

15. (original) The method of claim 11 wherein a gas pressure of about 1 Torr or greater is maintained in the chamber.

16. (currently amended) A method of cleaning a chamber of an electron beam treatment apparatus, the method comprising:

introducing a cleaning gas into the chamber;

generating an electron beam that energizes the cleaning gas in the chamber;

setting in the chamber, an electron beam current of about 10 mA or above;

adjusting a pressure of the cleaning gas to maintain the electron beam current at a substantially constant value; and

determining an endpoint of the cleaning process and stopping introduction of the cleaning gas when the cleaning gas pressure reaches a substantially constant value and maintains the value for a length of time of 5 seconds.

17. (previously presented) The method of claim 16 wherein the cleaning gas comprises an oxygen-based gas.

18. (previously presented) The method of claim 17 wherein the oxygen-based gas comprises one or more of $O_2$, ozone, NO, and $H_2O$.

19. (previously presented) The method of claim 16 wherein the cleaning gas comprises a fluorine-based gas.

20. (previously presented) The method of claim 19 wherein the fluorine-based gas comprises one or more of $NF_3$, $F_2$, $CF_4$, $C_2F_6$, $C_3F_8$, $SF_6$.

21. (new) The method of claim 1 comprising stopping the flow of cleaning gas when the cleaning gas pressure becomes substantially constant for a length of time of 5 seconds.

22. (new) The method of claim 8 comprising stopping the flow of cleaning gas when the cleaning gas pressure becomes substantially constant for a length of time of 5 seconds.